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File 5:Biosis Previews(R) 1926-2008/Aug W5
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Set	Items	Description
? s (distending) and (campylobacter()coli)		
	1209	DISTENDING
	13525	CAMPYLOBACTER
	332256	COLI
	1987	CAMPYLOBACTER(W)COLI
S1	21	(DISTENDING) AND (CAMPYLOBACTER()COLI)

? t s1/7/1-21

1/7/1
DIALOG(R)File 5:Biosis Previews(R)

0020214933 BIOSIS NO.: 200800261872
Differences in virulence attributes between cytolethal %%%distending%%%
toxin positive and negative Campylobacter jejuni strains
AUTHOR: Jain Deepika; Prasad Kashi Nath (Reprint); Sinhal Sushmita; Husain
Nuzhat
AUTHOR ADDRESS: Sanjay Gandhi Postgrad Inst Med Sci, Dept Microbiol,
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JOURNAL: Journal of Medical Microbiology 57 (3): p267-272 MAR 2008 2008
ITEM IDENTIFIER: doi:10.1099/jmm.0.47317-0
ISSN: 0022-2615
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Campylobacter jejuni is a common gastrointestinal bacterial pathogen. Although cytolethal %%%distending%%% toxin (CDT) is proposed to be an important virulence determinant of this pathogen, how CDT+ and CDT- strains differ in their biological properties remains largely unknown. The virulence properties of CDT+ and CDT- strains were studied on HeLa cells and in the suckling mouse model. Presence of the cdtB gene in Campylobacter species was determined by PCR. Five each of CDT+ and CDT- C. jejuni strains were subjected to adherence, invasion and cytotoxicity assay on the HeLa cell line. Bacterial culture supernatants with and without CDT activity were inoculated intragastrically into 2-day-old suckling mice. The mice were sacrificed within 48 h. Histopathological examination of stomach, jejunum, ileum and colon was performed by haematoxylin/eosin staining. cdtB was detected in 88 % and 14 % of C. jejuni and %%%Campylobacter%%% %%%coli%%% strains, respectively. CDT+ C. jejuni strains adhered to and invaded HeLa cells in significantly higher numbers than CDT- strains [CDT+ vs CDT-, adherence 2.7x10(4) +/- 3.5x10(4) vs 2.7x10(2) +/- 1.9x10(2); invasion 1.0x10(3) +/- 1.3x10(3) vs 1.4x10(1) +/- 3.1 x10(1); P<0.01]. Culture supernatants of all CDT+ strains demonstrated CDT activity on HeLa cells. Mice inoculated with supernatant containing CDT activity had moderate to severe pathology in different parts of their gastrointestinal tract, with the colon being the major target. Mice inoculated with supernatant lacking CDT activity

showed no significant pathology in the gastrointestinal tract. The results demonstrate that CDT+ C. jejuni strains adhere to and invade epithelial cells more efficiently than CDT- strains. CDT is responsible for intestinal pathology and the colon is the major target.

1/7/2
DIALOG(R)File 5:Biosis Previews(R)

0020189327 BIOSIS NO.: 200800236266
Isolation and species identification of campylobacters by genotyping of cytolethal %%%distending%%% toxin (CDT) gene from animals
AUTHOR: Asakura M (Reprint); Yoshida E; Samosomsuk W; Sugimoto N; Nishimura K; Yamasaki S
AUTHOR ADDRESS: Univ Osaka Prefecture, Sakai, Osaka 591, Japan**Japan
JOURNAL: Abstracts of the General Meeting of the American Society for Microbiology 105 p141 2005 2005
CONFERENCE/MEETING: 105th General Meeting of the American-Society-for-Microbiology Atlanta, GA, USA June 05 -09, 2005; 20050605
SPONSOR: Amer Soc Microbiol
ISSN: 1060-2011
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Citation
LANGUAGE: English

1/7/3
DIALOG(R)File 5:Biosis Previews(R)

0020130234 BIOSIS NO.: 200800177173
Development of a cytolethal %%%distending%%% toxin (cdt) gene-based species-specific multiplex PCR assay for the detection and identification of Campylobacter jejuni, %%%Campylobacter%%% %%%coli%%% and Campylobacter fetus
AUTHOR: Asakura Masahiro; Samosornsuk Worada; Hinenoya Atsushi; Misawa Naoaki; Nishimura Kazuhiko; Matsuhisa Akio; Yamasaki Shinji (Reprint)
AUTHOR ADDRESS: Univ Osaka Prefecture, Grad Sch Life and Environm Sci, Naka Ku, Osaka 5998531, Japan**Japan
AUTHOR E-MAIL ADDRESS: shinji@vet.osakafu-u.ac.jp
JOURNAL: FEMS Immunology and Medical Microbiology 52 (2): p260-266 MAR 2008 2008
ITEM IDENTIFIER: doi:10.1111/j.1574-695X.2007.00369.x
ISSN: 0928-8244
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A cytolethal %%%distending%%% toxin (cdt) gene-based species-specific multiplex PCR assay for the detection of cdtA, cdtB or cdtC gene of Campylobacter jejuni, %%%Campylobacter%%% %%%coli%%% or Campylobacter fetus, respectively, was developed and evaluated with 76 Campylobacter strains belonging to seven different species and 131 other bacterial strains of eight different genera. The cdtA, cdtB or cdtC gene of C. jejuni, C. coli or C. fetus, respectively, could be successfully

amplified using the corresponding set of primers in a highly species-specific manner. Furthermore, the specific primer set for the cdtA, cdtB or cdtC gene of a particular species could amplify the desired gene from a mixture of DNA templates of any of two or all three species. The detection limit of C. jejuni, C. coli or C. fetus was 10-100 CFU tube(-1) by the multiplex PCR assay on the basis of the presence of the cdtA, cdtB or cdtC gene. These data indicate that the cdt gene-based multiplex PCR assay may be useful for rapid and accurate detection as well as identification of Campylobacter strains in a species-specific manner.

1/7/4
DIALOG(R)File 5:Biosis Previews(R)

0020123865 BIOSIS NO.: 200800170804
Optimisation of glycan and small molecule arrays for analysis of Campylobacter chemotaxis and adherence
AUTHOR: Asakura M (Reprint)
AUTHOR ADDRESS: Univ Osaka Prefecture, Sakai, Osaka, Japan**Japan
JOURNAL: Zoonoses Public Health 54 (Suppl. 1): p99 2007 2007
CONFERENCE/MEETING: 14th International Workshop on Campylobacter, Helicobacter and Related Organisms Rotterdam, NETHERLANDS September 02 -05, 2007; 20070902
ISSN: 1863-1959
DOCUMENT TYPE: Meeting; Meeting Poster
RECORD TYPE: Citation
LANGUAGE: English

1/7/5
DIALOG(R)File 5:Biosis Previews(R)

0020123846 BIOSIS NO.: 200800170785
Differences in virulence determinants between cytolethal %%%distending%%% toxin producing and non-producing Campylobacter jejuni strains
AUTHOR: Jain D (Reprint); Prasad K N; Sinha S; Husain N
AUTHOR ADDRESS: SGPGIMS, Lucknow, Uttar Pradesh, India**India
JOURNAL: Zoonoses Public Health 54 (Suppl. 1): p93 2007 2007
CONFERENCE/MEETING: 14th International Workshop on Campylobacter, Helicobacter and Related Organisms Rotterdam, NETHERLANDS September 02 -05, 2007; 20070902
ISSN: 1863-1959
DOCUMENT TYPE: Meeting; Meeting Poster
RECORD TYPE: Citation
LANGUAGE: English

1/7/6
DIALOG(R)File 5:Biosis Previews(R)

0019895878 BIOSIS NO.: 200700555619
Evaluation of a cytolethal %%%distending%%% toxin (cdt) gene-based species-specific multiplex PCR assay for the identification of

Campylobacter strains isolated from poultry in Thailand
AUTHOR: Samosornsuk Worada; Asakura Masahiro; Yoshida Emi; Taguchi Takashi; Nishimura Kazuhiko; Eampokalap Boonchuay; Phongsisay Vongsavanh; Chaicumpa Wanpen; Yamasaki Shinji (Reprint)
AUTHOR ADDRESS: Osaka Prefecture Univ, Grad Sch Life and Environm Sci, Naka Ku, Osaka 5998531, Japan**Japan
AUTHOR E-MAIL ADDRESS: shinji@vet.osakafu-u.ac.jp
JOURNAL: Microbiology and Immunology 51 (9): p909-917 2007 2007
ISSN: 0385-5600
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: We have recently developed a cytolethal %%%distending%%% toxin (cdt) gene-based species-specific multiplex PCR assay for identifying Campylobacter jejuni, C. coli and C. fetus. In the present study, the applicability of this assay was evaluated with 34 Campylobacter-like organisms isolated from poultry in Thailand for species identification and was compared with other assays including API Campy, 16S rRNA gene sequence, and hippuricase (hipO) gene detection. Of the 34 strains analyzed, 20, 10 and 1 were identified as C. jejuni, C coli, and Arcobacter cryaerophilus, respectively, and 3 could not be identified by API Campy. However, 16S rRNA gene analysis, showed that all 34 strains are C. jejuni/coli. To discriminate between these 2 species, the hipO gene, which is specifically present in C. jejuni, was examined by PCR and was detected in 20 strains, which were identified as C. jejuni by API Campy but not in the remaining 14 strains. Collective results indicated that 20 strains were C. jejuni whereas the 14 strains were C. coli. When the cdt gene-based multiplex PCR was employed, however, 19, 20 and 19 strains were identified as C. jejuni while 13, 14 and 13 were identified as C. coli by the cdtA, cdtB and cdtC gene-based multiplex PCR, respectively. Pulsed-field gel electrophoresis revealed that C.jejuni and C. coli strains analyzed are genetically diverse. Taken together, these data suggest that the cdt gene-based multiplex PCR, particularly cdtB gene-based multiplex PCR, is a simple, rapid and reliable method for identifying the species of Campylobacter strains.

1/7/7

0019752944 BIOSIS NO.: 200700412685
Comparative analysis of cytolethal %%%distending%%% toxin (cdt) genes among Campylobacter jejuni, C-coli and C-fetus strains
AUTHOR: Asakura Masahiro; Samosornsuk Worada; Taguchi Masumi; Kobayashi Kazuhiro; Misawa Naoaki; Kusumoto Masahiro; Nishimura Kazuhiko; Matsuhisa Akio; Yamasaki Shinji (Reprint)
AUTHOR ADDRESS: Univ Osaka Prefecture, Grad Sch Life and Environm Sci, Naka Ku, Gakuen Cho, Sakai, Osaka 5998531, Japan**Japan
AUTHOR E-MAIL ADDRESS: shinji@vet.osakafu-u.ac.jp
JOURNAL: Microbial Pathogenesis 42 (5-6): p174-183 MAY-JUN 2007 2007
ITEM IDENTIFIER: doi:10.1016/j.micpath.2007.01.005
ISSN: 0882-4010
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The cytolethal %%%distending%%% toxin (cdt) gene clusters of %%%Campylobacter%%% %%%coli%%% strain Col-243 and C fetus strain Col-187 were cloned and sequenced to understand the importance of Cdt as a virulence factor. The cdt genes of C. coli and C fetus consist of three closely linked genes termed cdtA, cdtB, cdtC whose sizes are 774, 801, and 570 bp, and 702, 798, and 546 bp, respectively. The homologies of each subunit of cdt genes between C jejuni and C coli, C jejuni and C fetus, or C coli and C fetus are 59.6%, 40.3%, or 46.5% for cdtA, 70.2%, 62.4%, or 61.3% for edtB, 61.3%, 52.3%, or 50.1 % for cdtC, respectively. Colony hybridization assay revealed that the genes homologous to the cdtABC gene were distributed in all 27, 19, 20 strains of C jejuni, C. coli, and C fetus, respectively, isolated from patients and animals in species-specific manner. Furthermore, nucleotide sequence of the cdt operon, including flanking region, of 10 strains of each species indicated that though the size of the cdtB gene was conserved in each species, those of cdtA and cdtC genes varied particularly among C coli strains. Amino acid residues demonstrated to be important for toxin activity in CdtB, corresponding to H 152, D185, D222, D258, H259 in Cj-CdtB, were also conserved in Cc-CdtB and Cf-CdtB. The cdt gene cluster was located in different sites among different species but in the same site of genomes of the same species. Cdt activity produced by C jejuni and C. fetus varied among strains, however, any C coli strains exhibited Cdt activity on HeLa cells. These data indicate that the cdt gene may have a potential for virulence factor at least in C jejuni and C fetus.

1/7/8
DIALOG(R)File 5:Biosis Previews(R)

0019664241 BIOSIS NO.: 200700323982
Development of a multiplex PCR assay for the detection of the cytolethal distending toxin genes in Campylobacter jejuni, C-coli and C-fetus
AUTHOR: Asakura M (Reprint); Yoshida E; Nishimura K; Taguchi A; Kobayashi K ; Yamasaki S
AUTHOR ADDRESS: Univ Osaka Prefecture, Grad Sch Agr and Biol Sci, Osaka, Japan**Japan
JOURNAL: Abstracts of the General Meeting of the American Society for Microbiology 104 p209 2004 2004
CONFERENCE/MEETING: 104th General Meeting of the American-Society-for-Microbiology New Orleans, LA, USA May 23 -27, 2004; 20040523
SPONSOR: Amer Soc Microbiol
ISSN: 1060-2011
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Citation
LANGUAGE: English

1/7/9
DIALOG(R)File 5:Biosis Previews(R)

0019544568 BIOSIS NO.: 200700204309
Relationships between bacterial genotypes and in vitro virulence properties

of Campylobacter jejuni and %%%Campylobacter%%% %%%coli%%% isolated from turkeys
AUTHOR: Haenel I (Reprint); Borrmann E; Mueller J; Alter T
AUTHOR ADDRESS: Fed Res Inst Anim Hlth, Inst Mol Pathogenesis, Naumburger Str 96A, D-07743 Jena, Germany**Germany
AUTHOR E-MAIL ADDRESS: ingrid.haenel@fli.bund.de
JOURNAL: Journal of Applied Microbiology 102 (2): p433-441 FEB 2007 2007
ISSN: 1364-5072
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Campylobacter isolates from turkeys were genotyped and characterized by their in vitro virulence properties. Relationships between bacterial genotypes and virulence properties were analysed.Isolates were analysed by pulsed-field gel electrophoresis and fla typing. The toxin production was determined on the phenotypic level using a CHO-K1 cell culture model and on the genotypic level using PCR for detection of the cdtA, cdtB and cdtC genes. Although the cdtB gene was detected from 100% of the Campylobacter jejuni and %%%Campylobacter%%% %%%coli%%% isolates we observed three different morphological pictures on the cells. Cytotoxicity was associated with cell distension or cell rounding. All four Camp. coli strains and one Camp. jejuni strain did not produce any cytotoxic changes on the cells. Adhesion, invasion and survival of Campylobacter isolates were determined in a Caco-2 cell culture model. All isolates adhered to and invaded Caco-2 cells, whereas 64.7% of the strains survived for 48 h in the cells.Seventeen Campylobacter isolates from turkeys were classified into four groups with regard to their in vitro abilities. Jackknife analysis revealed a strong association between these groups and genotype clusters.Typing methods have generally failed to identify strains with specific virulence properties. This study suggests that a relationship between subgroups of Campylobacter with common in vitro virulence characteristics and genotypes exist.

1/7/10
DIALOG(R)File 5:Biosis Previews(R)

19060686 BIOSIS NO.: 200600406081
Adherence to and invasion of human intestinal epithelial cells by Campylobacter jejuni and %%%Campylobacter%%% %%%coli%%% isolates from retail meat products
AUTHOR: Zheng JIE; Meng JIANGHONG; Zhao SHAOHUA; Singh RUBY; Song WENXIA (Reprint)
AUTHOR ADDRESS: Univ Maryland, Dept Cell Biol and Mol Genet, College Pk, MD 20742 USA**USA
AUTHOR E-MAIL ADDRESS: wenxsong@umd.edu
JOURNAL: Journal of Food Protection 69 (4): p768-774 APR 2006 2006
ISSN: 0362-028X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The abilities of 34 Campylobacter jejuni and 9 %%%Campylobacter%%% %%%coli%%% isolates recovered from retail meats to

adhere to and invade human intestinal epithelial T84 cells were examined and compared with those of a well-characterized human clinical strain, C jejuni 81-176, to better assess the pathogenic potential of these meat isolates. The meat isolates exhibited a wide range of adherence and invasion abilities; a few of the isolates adhered to and invaded T84 cells almost as well as did C jejuni 81-176. There was a significant correlation between the adherence ability and the invasion ability of the Campylobacter isolates. The presence of eight putative virulence genes in these Campylobacter isolates that are potentially responsible for adherence and invasion or that encode cytolethal %%%distending%%% toxin was determined using PCR. All Campylobacter isolates possessed flaA, cadF, pldA, cdtA, cdtB, and cdtC, and most (91%) also contained the ciaB gene. However, the virBII gene, carried by virulence plasmid pVir, was absent in almost all the Campylobacter isolates. Our findings indicated that C jejuni and C. coli present in retail meat were diverse in their ability to adhere to and invade human intestinal epithelial cells and that the putative virulence genes were widespread among the Campylobacter isolates. Thus, despite of the presence of the putative virulence genes, only some but not all Campylobacter strains isolated from retail meat can effectively invade human intestinal epithelial cells in vitro.

17391700 BIOSIS NO.: 200300350419
PCR detection of seven virulence and toxin genes of Campylobacter jejuni and %%%Campylobacter%%% %%%coli%%% isolates from Danish pigs and cattle and cytolethal %%%distending%%% toxin production of the isolates.
AUTHOR: Bang D D (Reprint); Nielsen E Moller; Scheutz F; Pedersen K; Handberg K; Madsen M
AUTHOR ADDRESS: Department of Poultry, Fish and Fur Animals, Danish Veterinary Institute, Hangovej 2, DK-8200, Aarhus N, Denmark**Denmark
AUTHOR E-MAIL ADDRESS: ddb@vetinst.dk
JOURNAL: Journal of Applied Microbiology 94 (6): p1003-1014 2003 2003
MEDIUM: print
ISSN: 1364-5072
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Aims: To study the prevalence of seven virulence and toxin genes, and cytolethal %%%distending%%% toxin (CDT) production of Campylobacter jejuni and C. coli isolates from Danish pigs and cattle. Methods and Results: The presence of the cadF, ceuE, virB11, flaA, cdtA, cdtB, cdtC and the cdt gene cluster among 40 C. jejuni and C. coli isolates was detected by polymerase chain reaction. The CDT production of the isolates was determined on Vero, colon 205 and chicken embryo cells. The cadF, flaA, ceuE and cdtB genes were detected from 100% of the isolates. The cdtA and cdtC genes were found in 95.0 and 90.0% of the isolates, respectively. The cdt gene cluster was detected in 82.5% isolates. Only 7.5% of the isolates were positive for virB11. Ninety-five per cent of the isolates produced CDT in Vero and colon 205 cell assays, and 90% of the isolates produced CDT in chicken embryo cell assays. Conclusions: High prevalence of the cadF, ceuE, flaA and cdtB genes was found. Data of the prevalence of cdt genes was consistent with the CDT titres produced

by the isolates. %%%Campylobacter%%% %%%coli%%% from pigs produced high CDT titres. Significance and Impact of the Study: The high prevalence of seven virulence and toxin genes demonstrated that these putative pathogenic determinants are widespread among Campylobacter isolates from pigs and cattle. %%%Campylobacter%%% %%%coli%%% isolates from pigs produced much higher CDT titres compared with C. coli isolates from other sources suggesting that C. coli may be particularly adapted to or associated with this species.

1/7/12
DIALOG(R)File 5:Biosis Previews(R)

16846487 BIOSIS NO.: 200200439998
Campylobacter jejuni cytolethal %%%distending%%% toxin mediates release of interleukin-8 from intestinal epithelial cells
AUTHOR: Hickey Thomas E; McVeigh Annette L; Scott Daniel A; Michielutti Ronda E; Bixby Alyssa; Carroll Shannon A; Bourgeois A Louis; Guerry Patricia (Reprint)
AUTHOR ADDRESS: Enteric Diseases Department, Naval Medical Research Center, 503 Robert Grant Ave., Walter Reed Forest Glen Annex, Silver Spring, MD, 20910, USA**USA
JOURNAL: Infection and Immunity 68 (12): p6535-6541 December, 2000 2000
MEDIUM: print
ISSN: 0019-9567
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Live cells of Campylobacter jejuni and %%%Campylobacter%%% %%%coli%%% can induce release of interleukin-8 (IL-8) from INT407 cells. Additionally, membrane fractions of C. jejuni 81-176, but not membrane fractions of C. coli strains, can also induce release of IL-8. Membrane preparations from 81-176 mutants defective in any of the three membrane-associated protein subunits of cytolethal %%%distending%%% toxin (CDT) were unable to induce IL-8. The presence of the three cdt genes on a shuttle plasmid in trans restored both CDT activity and the ability to release IL-8 to membrane fractions. However, CDT mutations did not affect the ability of 81-176 to induce IL-8 during adherence to or invasion of INT407 cells. When C. jejuni cdt genes were transferred on a shuttle plasmid into a C. coli strain lacking CDT, membrane preparations became positive in both CDT and IL-8 assays. Growth of C. jejuni in physiological levels of sodium deoxycholate released all three CDT proteins, as well as CDT activity and IL-8 activity, from membranes into supernatants. Antibodies against recombinant forms of each of the three CDT subunit proteins neutralized both CDT activity and the activity responsible for IL-8 release. The data suggest that C. jejuni can induce IL-8 release from INT407 cells by two independent mechanisms, one of which requires adherence and/or invasion and the second of which requires CDT.

1/7/13
DIALOG(R)File 5:Biosis Previews(R)

16479692 BIOSIS NO.: 200200073203
Prevalence of cytolethal %%%distending%%% toxin (cdt) genes and CDT production in Campylobacter spp. isolated from Danish broilers
AUTHOR: Bang Dang D (Reprint); Scheutz Flemming; Ahrens Peter; Pedersen Karl; Blom Jens; Madsen Mogens
AUTHOR ADDRESS: Department of Poultry, Fish, and Fur Animals, Danish Veterinary Laboratory, Hangovej 2, DK-8200, Aarhus N, Denmark**Denmark
JOURNAL: Journal of Medical Microbiology 50 (12): p1087-1094 December, 2001 2001
MEDIUM: print
ISSN: 0022-2615
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The pathogenesis of campylobacter infection in man is largely unknown, although cytolethal %%%distending%%% toxin (CDT) has been incriminated as a virulence factor. However, little is known about the cdt genes in Campylobacter spp. isolated from broiler chickens. A total of 350 cloacal swabs was collected and tested by conventional culture and PCR. Of the 114 Campylobacter isolates obtained, 101 (88.6%) were identified as C. jejuni and 13 (11.4%) as C. coli by conventional methods. cdt genes were detected by PCR in all the isolates except one C. jejuni isolate. Cytotoxic effects were produced in a Vero cell line, by 100 of the C. jejuni isolates. In contrast, 10 C. coli isolates produced much lower levels of toxin and 3 produced no detectable toxin. These results confirm the common occurrence of campylobacter infection in chickens and indicate that cdt genes are commonly present in both C. jejuni and C. coli isolates from broilers, but that there are distinct differences in CDT production in these two closely related species.

1/7/14
DIALOG(R)File 5:Biosis Previews(R)

16477619 BIOSIS NO.: 200200071130
Classical and molecular identification of Campylobacter jejuni and %%%Campylobacter%%% %%%coli%%% from poultry samples on Slovenian market
AUTHOR: Zorman T (Reprint); Mavri U; Mozina S Smole
AUTHOR ADDRESS: Biotechnical Faculty, Department for Food Science and Technology, Slovenia, University of Ljubljana, Ljubljana, Slovenia** Slovenia
JOURNAL: IJMM International Journal of Medical Microbiology 291 (Supplement 31): p40 September, 2001 2001
MEDIUM: print
CONFERENCE/MEETING: 11th International Workshop on Campylobacter, Helicobacter and related Organisms Freiburg, Germany September 01-05, 2001; 20010901
ISSN: 1438-4221
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Citation
LANGUAGE: English

1/7/15
DIALOG(R)File 5:Biosis Previews(R)

16460440 BIOSIS NO.: 200200053951
Cytolethal %%%distending%%% toxin B gene (cdtB) homologues in taxons 1, 2, 3, 4, 5 and 8 of Helicobacter species flexispira
AUTHOR: Kostia S (Reprint); Hanninen M (Reprint)
AUTHOR ADDRESS: University of Helsinki, Helsinki, Finland**Finland
JOURNAL: IJMM International Journal of Medical Microbiology 291 (Supplement 31): p149 September, 2001 2001
MEDIUM: print
CONFERENCE/MEETING: 11th International Workshop on Campylobacter, Helicobacter and related Organisms Freiburg, Germany September 01-05, 2001; 20010901
ISSN: 1438-4221
DOCUMENT TYPE: Meeting; Meeting Abstract
RECORD TYPE: Citation
LANGUAGE: English

1/7/16
DIALOG(R)File 5:Biosis Previews(R)

15168000 BIOSIS NO.: 199900427660
The cytolethal %%%distending%%% toxin family
AUTHOR: Pickett Carol L (Reprint); Whitehouse Chris A (Reprint)
AUTHOR ADDRESS: Dept of Microbiology and Immunology, University of Kentucky, Lexington, KY, 40536-0298, USA**USA
JOURNAL: Trends in Microbiology 7 (7): p292-297 July, 1999 1999
MEDIUM: print
ISSN: 0966-842X
DOCUMENT TYPE: Article; Literature Review
RECORD TYPE: Citation
LANGUAGE: English

1/7/17
DIALOG(R)File 5:Biosis Previews(R)

14984828 BIOSIS NO.: 199900244488
Detection of cytolethal %%%distending%%% toxin activity and cdt genes in Campylobacter spp. isolated from chicken carcasses
AUTHOR: Eyigor Aysegul; Dawson Karl A; Langlois Bruce E; Pickett Carol L (Reprint)
AUTHOR ADDRESS: Department of Microbiology and Immunology, Chandler Medical Center, University of Kentucky, 800 Rose St., Lexington, KY, 40536-0084, USA**USA
JOURNAL: Applied and Environmental Microbiology 65 (4): p1501-1505 April, 1999 1999
MEDIUM: print
ISSN: 0099-2240
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: This study was designed to determine whether isolates from

chicken carcasses, the primary source of Campylobacter jejuni and %%%Campylobacter%%% %%%coli%%% in human infections, commonly carry the cdt genes and also whether active cytolethal %%%distending%%% toxin (CDT) is produced by these isolates. Campylobacter spp. were isolated from all 91 fresh chicken carcasses purchased from local supermarkets. Campylobacter spp. were identified on the basis of both biochemical and PCR tests. Of the 105 isolates, 70 (67%) were identified as C. jejuni, and 35 (33%) were identified as C. coli. PCR tests amplified portions of the cdt genes from all 105 isolates. Restriction analysis of PCR products indicated that there appeared to be species-specific differences between the C. jejuni and C. coli cdt genes, but that the restriction patterns of the cdt genes within strains of the same species were almost invariant. Quantitation of active CDT levels produced by the isolates indicated that all C. jejuni strains except four (94%) had mean CDT titers greater than 100. Only one C. jejuni strain appeared to produce no active CDT. C. coli isolates produced little or no toxin. These results confirm the high rate of Campylobacter sp. contamination of fresh chicken carcasses and indicate that cdt genes may be universally present in C. jejuni and C. coli isolates from chicken carcasses.

1/7/18
DIALOG(R)File 5:Biosis Previews(R)

14977308 BIOSIS NO.: 199900236968
Cytolethal %%%distending%%% toxin genes in Campylobacter jejuni and %%%Campylobacter%%% %%%coli%%% isolates: Detection and analysis by PCR
AUTHOR: Eyigor Aysegul; Dawson Karl A; Langlois Bruce E; Pickett Carol L (Reprint)
AUTHOR ADDRESS: Department of Microbiology and Immunology, Chandler Medical Center, University of Kentucky, 800 Rose St., Lexington, KY, 40536-0298, USA**USA
JOURNAL: Journal of Clinical Microbiology 37 (5): p1646-1650 May, 1999
1999
MEDIUM: print
ISSN: 0095-1137
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Campylobacter jejuni produces a toxin called cytolethal %%%distending%%% toxin (CDT). Knowledge of the prevalence and homogeneity of Campylobacter sp. cdt genes is incomplete. In this work, we identified four PCR primer pairs that collectively amplified cdt genes in all of the C. jejuni and %%%Campylobacter%%% %%%coli%%% strains tested. Restriction analyses of the cdt PCR products showed clear differences between the cdt genes of these two species, yet there were few heterogeneities noted between members of the same species. Consequently, it may be possible to speciate C. jejuni and C. coli isolates on the basis of restriction patterns within their cdt genes.

1/7/19
DIALOG(R)File 5:Biosis Previews(R)

14623418 BIOSIS NO.: 199800417665
Campylobacter spp. isolated from chicken carcasses: Prevalence and detection of cytolethal %%%distending%%% toxin production
AUTHOR: Eyigor A; Langlois B E; Dawson K; Pickett C L
AUTHOR ADDRESS: Univ. Kentucky, Lexington, KY, USA**USA
JOURNAL: Abstracts of the General Meeting of the American Society for Microbiology 98 p413 1998 1998
MEDIUM: print
CONFERENCE/MEETING: 98th General Meeting of the American Society for Microbiology Atlanta, Georgia, USA May 17-21, 1998; 19980517
SPONSOR: American Society for Microbiology
ISSN: 1060-2011
DOCUMENT TYPE: Meeting; Meeting Abstract; Meeting Poster
RECORD TYPE: Citation
LANGUAGE: English

1/7/20
DIALOG(R)File 5:Biosis Previews(R)

13406673 BIOSIS NO.: 199699040733
Prevalence of cytolethal %%%distending%%% toxin production in Campylobacter jejuni and relatedness of Campylobacter sp. cdtB genes
AUTHOR: Pickett Carol L (Reprint); Pesci Evertt C; Cottle Daniel L; Russell Gina; Erdem Aysegul Nalca; Zeytn Hasan
AUTHOR ADDRESS: Dep. Microbiol. Immunol., Univ. Kentucky, Chandler Med. Cent., 800 Rose Street, Lexington, KY 40536-0084, USA**USA
JOURNAL: Infection and Immunity 64 (6): p2070-2078 1996 1996
ISSN: 0019-9567
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Campylobacter jejuni produces a toxin called cytolethal %%%distending%%% toxin (CDT). The genes encoding this toxin in C. jejuni 81-176 were cloned and sequenced. The nucleotide sequence of the genes revealed that there are three genes, cdtA, cdtB, and cdtC, encoding proteins with predicted sizes of 30,116, 28,989, and 21,157 Da, respectively. All three proteins were found to be related to the Escherichia coli CDT proteins, yet the amino acid sequences have diverged significantly. All three genes were required for toxic activity in a HeLa cell assay. HeLa cell assays of a variety of C. jejuni and C. coli strains suggested that most C. jejuni strains produce significantly higher CDT titers than do C. coli strains. Southern hybridization experiments demonstrated that the cdtB gene is present on a 6.0-kb ClaI fragment in all but one of the C. jejuni strains tested; the cdtB gene was on a 6.9-kb ClaI fragment in one strain. The C. jejuni 81-176 cdtB probe hybridized weakly to DNAs from C. coli strains. The C. jejuni 81-176 cdtB probe did not hybridize to DNAs from representative C. fetus, C. lari, C. "upsaliensis," and C. hyointestinalis strains, although the HeLa cell assay indicated that these strains make CDT. PCR experiments indicated the probable presence of cdtB sequences in all of these Campylobacter species.

1/7/21

DIALOG(R)File 5:Biosis Previews(R)

09176631 BIOSIS NO.: 198886016552
A NEW HEAT-LABILE CYTOLETHAL %%%DISTENDING%%% TOXIN CLDT PRODUCED BY CAMPYLOBACTER-SPP
AUTHOR: JOHNSON W M (Reprint); LIOR H
AUTHOR ADDRESS: NATL ENTERIC REFERENCE CENT, ENTERIC BACTERIOL DIV, BUREAU MICROBIOLOGY, LAB CENTRE DIS CONTROL, TUNNEY'S PASTURE, OTTAWA, ONT K1A 0L2, CAN**CANADA
JOURNAL: Microbial Pathogenesis 4 (2): p115-126 1988
ISSN: 0882-4010
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: ENGLISH

ABSTRACT: A new heat-labile toxin cytolethal to CHO, Vero, HeLa, and HEp-2 cells and negative in Y-1 cells has been demonstrated in culture filtrates of many strains of Campylobacter spp. This new toxin was termed a cytolethal %%%distending%%% toxin (CLDT) to reflect the progressive cell distention and eventual cytotoxicity observed in all sensitive tissue cells. CLDT was distinct from previously reported cytotoxins and cholera-like enterotoxin produced by some Campylobacter spp. Since CHO elongation induced by either the Campylobacter enterotoxin or CLDT could not be differentiated after 2 h incubation, continuation of the assay for 96 h was essential for observation of CLDT-associated progressive morphological changes and cytolethal events. Specific assay conditions were required for demonstration of CLDT in Vero, HeLa, and HEp-2 cells. A 31-fold increase in cyclic AMP levels was observed in CHO cells exposed for 24 h to CLDT of catalase negative or weak positive Campylobacter. CLDT was detected in culture filtrates from strains of Campylobacter jejuni, c. coli, C. fetus subsp. fetus, C. laridis and catalase negative or weak positive Campylobacter. Of 718 strains investigated from both human and animal isolations, 295 (41%) were found to produce this toxin. Campylobacter CLDT was negative in adult rabbit ligated ileal loops, suckling mouse and rabbit skin tests. Hemorrhagic responses were observed in rat ligated ileal loop tests of CLDT-positive cultures. The new CLDT toxin could only be neutralized by homologous rabbit antitoxin, was trypsin-sensitive, nondialyzable and over 30,000 in molecular weight. CLDT-producing strains were observed in many serogroups and biotypes of Campylobacter spp. The strains tested originated in many countries and no clear association of toxigenicity with serotype or biotype could be established.
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E7	2	AU=YAMASAKI SHIORI

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? e au=assakura masahiro

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 4/7/1
DIALOG(R)File   5:Biosis Previews(R)
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0020130234   BIOSIS NO.: 200800177173
Development of a cytolethal distending toxin (cdt) gene-based
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species-specific multiplex PCR assay for the detection and identification of Campylobacter jejuni, Campylobacter coli and Campylobacter fetus
AUTHOR: %%%Asakura Masahiro%%%; Samosornsuk Worada; Hinenoya Atsushi; Misawa Naoaki; Nishimura Kazuhiko; Matsuhisa Akio; %%%Yamasaki Shinji%%% (Reprint)
AUTHOR ADDRESS: Univ Osaka Prefecture, Grad Sch Life and Environm Sci, Naka Ku, Osaka 5998531, Japan**Japan
AUTHOR E-MAIL ADDRESS: shinji@vet.osakafu-u.ac.jp
JOURNAL: FEMS Immunology and Medical Microbiology 52 (2): p260-266 MAR 2008 2008
ITEM IDENTIFIER: doi:10.1111/j.1574-695X.2007.00369.x
ISSN: 0928-8244
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A cytolethal distending toxin (cdt) gene-based species-specific multiplex PCR assay for the detection of cdtA, cdtB or cdtC gene of Campylobacter jejuni, Campylobacter coli or Campylobacter fetus, respectively, was developed and evaluated with 76 Campylobacter strains belonging to seven different species and 131 other bacterial strains of eight different genera. The cdtA, cdtB or cdtC gene of C. jejuni, C. coli or C. fetus, respectively, could be successfully amplified using the corresponding set of primers in a highly species-specific manner. Furthermore, the specific primer set for the cdtA, cdtB or cdtC gene of a particular species could amplify the desired gene from a mixture of DNA templates of any of two or all three species. The detection limit of C. jejuni, C. coli or C. fetus was 10-100 CFU tube(-1) by the multiplex PCR assay on the basis of the presence of the cdtA, cdtB or cdtC gene. These data indicate that the cdt gene-based multiplex PCR assay may be useful for rapid and accurate detection as well as identification of Campylobacter strains in a species-specific manner.

4/7/2
DIALOG(R)File 5:Biosis Previews(R)

0019923467 BIOSIS NO.: 200700583208
An inducible lambdoid prophage encoding cytolethal distending toxin (Cdt-I) and a type III effector protein in enteropathogenic Escherichia coli
AUTHOR: %%%Asakura Masahiro%%%; Hinenoya Atsushi; Alam Mohammad S; Shima Kensuke; Zahid Shamim Hasan; Shi Lei; Sugimoto Norihiko; Ghosh A N; Ramamurthy T; Faruque Shah M; Nair G Balakrish (Reprint); %%%Yamasaki%%% %%% Shinji%%%
AUTHOR ADDRESS: Int Ctr Diarrhoeal Dis Res, Mol Genet Lab, Dhaka 1212, Bangladesh**Bangladesh
AUTHOR E-MAIL ADDRESS: gbnair@icddrb.org; shinji@vet.osakafu-u.ac.jp
JOURNAL: Proceedings of the National Academy of Sciences of the United States of America 104 (36): p14483-14488 SEP 4 2007 2007
ITEM IDENTIFIER: doi:10.1073/pnas.0706695104
ISSN: 0027-8424
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Cytolethal distending toxins (CDTs) are inhibitory cyclomodulins,

which block eukaryotic cell proliferation and are produced by a diverse group of Gram-negative bacteria, including Escherichia coli strains associated with intestinal and extraintestinal infections. However, the mode of transmission of the toxin gene clusters among diverse bacterial pathogens is unclear. We found that Cdt-I produced by enteropathogenic E. coli strains associated with diarrhea is encoded by a lambdoid prophage, which is inducible and infectious. The genome of Cdt-I converting phage (CDT-14)) comprises 47,021 nucleotides with 60 predicted ORFs organized into six genomic regions encoding the head and tail, virulence, integrase, unknown functions, regulation, and lysis. The genomic organization of CDT-1(D is similar to those of SfV, a serotype-converting phage of Shigella flexneri, and UT189, a prophage identified in uropathogenic E. coli. Besides the cdtl gene cluster, the virulence region of CDT-1(P genome contains sequences homologous to a truncated cycle inhibiting factor and a type 3 effector protein. Mutation analysis of susceptible E. coli strain C600 suggested that the outer membrane protein OmpC is a putative receptor for CDT-1(D. CDT-1 Phi genome was also found to integrate into the host bacterial chromosome forming lysogens, which produced biologically active Cdt-1. Furthermore, phage induction appeared to cause enhanced toxigenicity of the E. coli strains carrying lysogenic CDT-1(D. Our results suggest that CDT-14) is the latest member of a growing family of lambdoid phages encoding bacterial cyclomodulins and that the phage may have a role in horizontal transfer of these virulence genes.

4/7/3
DIALOG(R)File 5:Biosis Previews(R)

0019895878 BIOSIS NO.: 200700555619
Evaluation of a cytolethal distending toxin (cdt) gene-based species-specific multiplex PCR assay for the identification of Campylobacter strains isolated from poultry in Thailand
AUTHOR: Samosornsuk Worada; %%%Asakura Masahiro%%%; Yoshida Emi; Taguchi Takashi; Nishimura Kazuhiko; Eampokalap Boonchuay; Phongsisay Vongsavanh; Chaicumpa Wanpen; %%%Yamasaki Shinji%%% (Reprint)
AUTHOR ADDRESS: Osaka Prefecture Univ, Grad Sch Life and Environm Sci, Naka Ku, Osaka 5998531, Japan**Japan
AUTHOR E-MAIL ADDRESS: shinji@vet.osakafu-u.ac.jp
JOURNAL: Microbiology and Immunology 51 (9): p909-917 2007 2007
ISSN: 0385-5600
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: We have recently developed a cytolethal distending toxin (cdt) gene-based species-specific multiplex PCR assay for identifying Campylobacter jejuni, C. coli and C. fetus. In the present study, the applicability of this assay was evaluated with 34 Campylobacter-like organisms isolated from poultry in Thailand for species identification and was compared with other assays including API Campy, 16S rRNA gene sequence, and hippuricase (hipO) gene detection. Of the 34 strains analyzed, 20, 10 and 1 were identified as C. jejuni, C coli, and Arcobacter cryaerophilus, respectively, and 3 could not be identified by API Campy. However, 16S rRNA gene analysis, showed that all 34 strains are C. jejuni/coli. To discriminate between these 2 species, the hipO

gene, which is specifically present in C. jejuni, was examined by PCR and was detected in 20 strains, which were identified as C. jejuni by API Campy but not in the remaining 14 strains. Collective results indicated that 20 strains were C. jejuni whereas the 14 strains were C. coli. When the cdt gene-based multiplex PCR was employed, however, 19, 20 and 19 strains were identified as C. jejuni while 13, 14 and 13 were identified as C. coli by the cdtA, cdtB and cdtC gene-based multiplex PCR, respectively. Pulsed-field gel electrophoresis revealed that C.jejuni and C. coli strains analyzed are genetically diverse. Taken together, these data suggest that the cdt gene-based multiplex PCR, particularly cdtB gene-based multiplex PCR, is a simple, rapid and reliable method for identifying the species of Campylobacter strains.

0019752944 BIOSIS NO.: 200700412685
Comparative analysis of cytolethal distending toxin (cdt) genes among Campylobacter jejuni, C-coli and C-fetus strains
AUTHOR: %%%Asakura Masahiro%%%; Samosornsuk Worada; Taguchi Masumi; Kobayashi Kazuhiro; Misawa Naoaki; Kusumoto Masahiro; Nishimura Kazuhiko; Matsuhisa Akio; %%%Yamasaki Shinji%%% (Reprint)
AUTHOR ADDRESS: Univ Osaka Prefecture, Grad Sch Life and Environm Sci, Naka Ku, Gakuen Cho, Sakai, Osaka 5998531, Japan**Japan
AUTHOR E-MAIL ADDRESS: shinji@vet.osakafu-u.ac.jp
JOURNAL: Microbial Pathogenesis 42 (5-6): p174-183 MAY-JUN 2007 2007
ITEM IDENTIFIER: doi:10.1016/j.micpath.2007.01.005
ISSN: 0882-4010
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The cytolethal distending toxin (cdt) gene clusters of Campylobacter coli strain Col-243 and C fetus strain Col-187 were cloned and sequenced to understand the importance of Cdt as a virulence factor. The cdt genes of C. coli and C fetus consist of three closely linked genes termed cdtA, cdtB, cdtC whose sizes are 774, 80 1, and 570 bp, and 702, 798, and 546 bp, respectively. The homologies of each subunit of cdt genes between C jejuni and C coli, C jejuni and C fetus, or C coli and C fetus are 59.6%, 40.3%, or 46.5% for cdtA, 70.2%, 62.4%, or 61.3% for edtB, 61.3%, 52.3%, or 50.1 % for cdtC, respectively. Colony hybridization assay revealed that the genes homologous to the cdtABC gene were distributed in all 27, 19, 20 strains of C jejuni, C. coli, and C fetus, respectively, isolated from patients and animals in species-specific manner. Furthermore, nucleotide sequence of the cdt operon, including flanking region, of 10 strains of each species indicated that though the size of the cdtB gene was conserved in each species, those of cdtA and cdtC genes varied particularly among C coli strains. Amino acid residues demonstrated to be important for toxin activity in CdtB, corresponding to H 152, D185, D222, D258, H259 in Cj-CdtB, were also conserved in Cc-CdtB and Cf-CdtB. The cdt gene cluster was located in different sites among different species but in the same site of genomes of the same species. Cdt activity produced by C jejuni and C. fetus varied among strains, however, any C coli strains exhibited Cdt activity on HeLa cells. These data indicate that the cdt gene may

have a potential for virulence factor at least in C jejuni and C fetus.
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4/7/5
DIALOG(R)File 5:Biosis Previews(R)

0019685440 BIOSIS NO.: 200700345181
Cytolethal distending toxin (Cdt)-producing Escherichia coli isolated from a child with bloody diarrhea in Japan
AUTHOR: Hinenoya Atsushi; Nagita Akira; %%%Asakura Masahiro%%%; Tsukamoto Teizo; Ramamuthy Thandavarayan; Nair Gopinath Balakrish; Takeda Yoshifumi ; %%%Yamasaki Shinji%%% (Reprint)
AUTHOR ADDRESS: Univ Osaka Prefecture, Grad Sch Life and Environm Sci, Sakai, Osaka 5998531, Japan**Japan
AUTHOR E-MAIL ADDRESS: shinji@vet.osakafu-u.ac.jp
JOURNAL: Microbiology and Immunology 51 (4): p435-438 2007 2007
ISSN: 0385-5600
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: In a retrospective analysis by PCR, the cdtI gene encoding the cytolethal distending toxin (Cdt) was detected in Escherichia coli O2:H12 strain isolated from the bloody diarrheal stool specimen of a child. To our knowledge, this is the first report showing the possible association of Cdt-producing E. coli in Japan, particularly in a child with bloody diarrhea.

4/7/6
DIALOG(R)File 5:Biosis Previews(R)

19097665 BIOSIS NO.: 200600443060
Species-specific identification of Vibrio fluvialis by PCR targeted to the conserved transcriptional activation and variable membrane tether regions of the toxR gene
AUTHOR: Chakraborty Rupa; Sinha Sutapa; Mukhopadhyay Asish K; %%%Asakura%%% %%% Masahiro%%%; %%%Yamasaki Shinji%%%; Bhattacharya S K; Nair G Balakrish; Ramamurthy T (Reprint)
AUTHOR ADDRESS: Natl Inst Cholera and Enter Dis, P-33,CIT Rd,Scheme XM, Calcutta 700010, India**India
AUTHOR E-MAIL ADDRESS: tramu@vsnl.net
JOURNAL: Journal of Medical Microbiology 55 (6): p805-808 JUN 2006 2006
ISSN: 0022-2615
DOCUMENT TYPE: Letter; Editorial
RECORD TYPE: Citation
LANGUAGE: English

4/7/7
DIALOG(R)File 5:Biosis Previews(R)

19087243 BIOSIS NO.: 200600432638

Effects of polyamines on two strains of Trypanosoma brucei in infected rats and in vitro culture
AUTHOR: Nishimura Kazuhiko (Reprint); Yanase Takako; Araki Noriko; Ohnishi Yoshihiro; Kozaki Shunji; Shima Kensuke; %%%Asakura Masahiro%%%; Samosomsuk Worada; %%%Yamasaki Shinji%%%
AUTHOR ADDRESS: Univ Osaka Prefecture, Course Vet Sci, Grad Sch Life and Environm Sci, 1-1,Gakuencho, Sakai, Osaka 5998531, Japan**Japan
AUTHOR E-MAIL ADDRESS: nisimura@vet.osakafu-u.ac.jp
JOURNAL: Journal of Parasitology 92 (2): p211-217 APR 2006 2006
ISSN: 0022-3395
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: We studied the effects of polyamines, which are necessary for proliferation and antioxidation in Trypanosoma brucei gambiense Wellcome strain (WS) and Trypanosoma brucei brucei ILtat 1.4 strain (IL). No difference was found in activity of ornithine decarboxylase (ODC), a key enzyme in polyamine synthesis in trypanosomes, in both strains maintained in vitro; higher ($P < 0.05$) ODC values were found in IL in vivo. However, WS in vivo exhibited higher proliferation rates with higher spermidine content and decreased host Survival times than IL. The in vitro proliferation and polyamine contents of WS increased with the addition of polyamine to the l-difluoromethylornithine culture medium, but not IL. These results suggested that WS uses extracellular polyamine for proliferation. In the in vitro culture, WS was less tolerant of hydrogen peroxide (oxidative stress) than IL, and malondialdehyde levels in WS were higher than in IL. The expression of trypanothione synthetase mRNA in WS in vitro was higher than in IL. These results suggest that IL is dependent on the synthesis of polyamines for proliferation and reduction of oxidative stress, whereas WS is dependent on the uptake of extracellular polyamines. A thorough understanding of the differences in the metabolic capabilities of various trypanosomes is important for the design of more effective medical treatments.

4/7/8
DIALOG(R)File 5:Biosis Previews(R)

19015652 BIOSIS NO.: 200600361047
Unnoticed spread of class 1 integrons in gram-positive clinical strains isolated in Guangzhou, China
AUTHOR: Shi Lei; Zheng Meiping; Xiao Zenghuang; %%%Asakura Masahiro%%%; Su Jianyu; Li Lin; %%%Yamasaki Shinji%%% (Reprint)
AUTHOR ADDRESS: Univ Osaka Prefecture, Grad Sch Life and Environm Sci, 1-1 Gakuen Cho, Sakai, Osaka 5998531, Japan**Japan
AUTHOR E-MAIL ADDRESS: shinji@vet.osakafu-u.ac.jp
JOURNAL: Microbiology and Immunology 50 (6): p463-467 2006 2006
ISSN: 0385-5600
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A total of 46 gram-positive bacteria isolated from clinical specimens collected in China were subjected to PCR analysis with the intI1-specific primers, and the intI1-positive strains were further

analyzed for their resistance gene cassette. All isolates possessed the class 1 integron in their genomes and the array of gene cassettes was dhfrXII-orJF-aadA2, which is very similar to other organisms except in one isolate carrying an additional copy of the class 1 integron containing the aadA2 gene cassette. Altogether, the results indicate that the class 1 integron is widespread in gram-positive clinical strains isolated in Guangzhou, China.

4/7/9
DIALOG(R)File 5:Biosis Previews(R)

18924440 BIOSIS NO.: 200600269835
Cytolethal distending toxin (CDT): Genetic diversity, structure and role in diarrheal disease
AUTHOR: %%%Yamasaki Shinji%%% (Reprint); %%%Asakura Masahiro%%%; Tsukamoto Teizo; Faruque Shah M; Deb Reema; Ramamurthy T
AUTHOR ADDRESS: Univ Osaka Prefecture, Grad Sch Life and Environm Sci, Dept Vet Sci, 1-1 Gakuen Cho, Sakai, Osaka 5998531, Japan**Japan
AUTHOR E-MAIL ADDRESS: shinji@vet.osakafu-u.ac.jp
JOURNAL: Toxin Reviews 25 (1): p61-88 APR-JUN 2006 2006
ISSN: 0731-3837_(print) 1525-6057_(electronic)
DOCUMENT TYPE: Article; Literature Review
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: In 1987, cytolethal distending toxin (CDT) was discovered by Johnson and Lior as a new type of protein toxin produced by certain strains of Escherichia coli, which is different from heat-labile enterotoxin (LT) produced by enterotoxigenic E. coli. Although LT causes only cell elongation, CDT causes cell elongation, cell distention, irreversible cell cycle arrest, and consequently, death of the cultured mammalian cells. Recently, CDT was recognized as a new family of bacterial toxin, as a genotoxin, produced by a diverse group of gram-negative bacteria, all of which are related to mucosal infection. Although tremendous efforts have been made to study the structure and mode of action of CDT, its role in bacterial pathogenesis still remains unclear. In this review, we focus mainly on CDT produced by enteric bacteria and describe the history of CDT, their gene and protein structure, structure-function relationship, and its mode of action particularly how CDT contributes to the gastrointestinal infections.

4/7/10
DIALOG(R)File 5:Biosis Previews(R)

18320405 BIOSIS NO.: 200510014905
Effects of heparin administration on Trypanosoma brucei gambiense infection in rats
AUTHOR: Nishimura Kazuhiko (Reprint); Shima Kensuke; %%%Asakura Masahiro%%%; Ohnishi Yoshihiro; %%%Yamasaki Shinji%%%
AUTHOR ADDRESS: Univ Osaka Prefecture, Grad Sch Agr and Biol Sci, Div Vet Sci, 1-1,Gakuencho, Sakai, Osaka 5998531, Japan**Japan
AUTHOR E-MAIL ADDRESS: nisimura@vet.osakafu-u.ac.jp
JOURNAL: Journal of Parasitology 91 (1): p219-222 FEB 05 2005

ISSN: 0022-3395
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: We examined whether heparin administration influences in vivo trypanosome proliferation in infected rats. Administration of heparin every 8 hr via cardiac catheter inhibited growth of Trypanosoma brucei gambiense and prolonged survival of treated rats. Heparin administration increased lipoprotein lipase activity, high-density lipoprotein (HDL) concentration in the blood, and haptoglobin messenger RNA content of the liver. The presence of heparin in culture media did Hot directly affect proliferation of trypanosomes in vitro. However, the addition of plasma from infected rats treated with heparin to culture media decreased the number of trypanosomes. This effect was decreased by incubating the trypanosomes with benzyl alcohol, a known inhibitor of receptor-mediated endocytosis of lipoprotein. These data suggested that heparin administration reduced the number of trypanosomes in infected rats. Trypanosome lytic factor, a HDL and haptoglobin-related protein, protects humans and some animals from infection by Trypanosoma brucei brucei. In rats, increases in HDL and haptoglobin may affect the proliferation of T. b. gambiense.
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S3   15   AU='ASAKURA MASAHIRO'
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              87 S2
      S5   3 S1 AND S2
? t s5/7/1-3

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DIALOG(R)File   5:Biosis Previews(R)
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0020130234   BIOSIS NO.: 200800177173
Development of a cytolethal %%%distending%%% toxin (cdt) gene-based species-specific multiplex PCR assay for the detection and identification of Campylobacter jejuni, %%%Campylobacter%%% %%%coli%%% and Campylobacter fetus
AUTHOR: Asakura Masahiro; Samosornsuk Worada; Hinenoya Atsushi; Misawa Naoaki; Nishimura Kazuhiko; Matsuhisa Akio; %%%Yamasaki Shinji%%% (Reprint)
AUTHOR ADDRESS: Univ Osaka Prefecture, Grad Sch Life and Environm Sci, Naka Ku, Osaka 5998531, Japan**Japan
AUTHOR E-MAIL ADDRESS: shinji@vet.osakafu-u.ac.jp
JOURNAL: FEMS Immunology and Medical Microbiology 52 (2): p260-266 MAR 2008 2008
ITEM IDENTIFIER: doi:10.1111/j.1574-695X.2007.00369.x
ISSN: 0928-8244
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: A cytolethal %%%distending%%% toxin (cdt) gene-based species-specific multiplex PCR assay for the detection of cdtA, cdtB or cdtC gene of Campylobacter jejuni, %%%Campylobacter%%% %%%coli%%% or Campylobacter fetus, respectively, was developed and evaluated with 76 Campylobacter strains belonging to seven different species and 131 other bacterial strains of eight different genera. The cdtA, cdtB or cdtC gene of C. jejuni, C. coli or C. fetus, respectively, could be successfully amplified using the corresponding set of primers in a highly species-specific manner. Furthermore, the specific primer set for the cdtA, cdtB or cdtC gene of a particular species could amplify the desired gene from a mixture of DNA templates of any of two or all three species. The detection limit of C. jejuni, C. coli or C. fetus was 10-100 CFU tube(-1) by the multiplex PCR assay on the basis of the presence of the cdtA, cdtB or cdtC gene. These data indicate that the cdt gene-based multiplex PCR assay may be useful for rapid and accurate detection as well as identification of Campylobacter strains in a species-specific manner.

0019895878 BIOSIS NO.: 200700555619
Evaluation of a cytolethal %%%distending%%% toxin (cdt) gene-based species-specific multiplex PCR assay for the identification of Campylobacter strains isolated from poultry in Thailand
AUTHOR: Samosornsuk Worada; Asakura Masahiro; Yoshida Emi; Taguchi Takashi; Nishimura Kazuhiko; Eampokalap Boonchuay; Phongsisay Vongsavanh; Chaicumpa Wanpen; %%%Yamasaki Shinji%%% (Reprint)
AUTHOR ADDRESS: Osaka Prefecture Univ, Grad Sch Life and Environm Sci, Naka Ku, Osaka 5998531, Japan**Japan
AUTHOR E-MAIL ADDRESS: shinji@vet.osakafu-u.ac.jp
JOURNAL: Microbiology and Immunology 51 (9): p909-917 2007 2007
ISSN: 0385-5600
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: We have recently developed a cytolethal %%%distending%%% toxin (cdt) gene-based species-specific multiplex PCR assay for identifying Campylobacter jejuni, C. coli and C. fetus. In the present study, the applicability of this assay was evaluated with 34 Campylobacter-like organisms isolated from poultry in Thailand for species identification and was compared with other assays including API Campy, 16S rRNA gene sequence, and hippuricase (hipO) gene detection. Of the 34 strains analyzed, 20, 10 and 1 were identified as C. jejuni, C coli, and Arcobacter cryaerophilus, respectively, and 3 could not be identified by API Campy. However, 16S rRNA gene analysis, showed that all 34 strains are C. jejuni/coli. To discriminate between these 2 species, the hipO gene, which is specifically present in C. jejuni, was examined by PCR and was detected in 20 strains, which were identified as C. jejuni by API Campy but not in the remaining 14 strains. Collective results indicated that 20 strains were C. jejuni whereas the 14 strains were C. coli. When the cdt gene-based multiplex PCR was employed, however, 19, 20 and 19 strains were identified as C. jejuni while 13, 14 and 13 were identified

as C. coli by the cdtA, cdtB and cdtC gene-based multiplex PCR, respectively. Pulsed-field gel electrophoresis revealed that C.jejuni and C. coli strains analyzed are genetically diverse. Taken together, these data suggest that the cdt gene-based multiplex PCR, particularly cdtB gene-based multiplex PCR, is a simple, rapid and reliable method for identifying the species of Campylobacter strains.

5/7/3
DIALOG(R)File 5:Biosis Previews(R)

0019752944 BIOSIS NO.: 200700412685
Comparative analysis of cytolethal %%%distending%%% toxin (cdt) genes among Campylobacter jejuni, C-coli and C-fetus strains
AUTHOR: Asakura Masahiro; Samosornsuk Worada; Taguchi Masumi; Kobayashi Kazuhiro; Misawa Naoaki; Kusumoto Masahiro; Nishimura Kazuhiko; Matsuhisa Akio; %%%Yamasaki Shinji%%% (Reprint)
AUTHOR ADDRESS: Univ Osaka Prefecture, Grad Sch Life and Environm Sci, Naka Ku, Gakuen Cho, Sakai, Osaka 5998531, Japan**Japan
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JOURNAL: Microbial Pathogenesis 42 (5-6): p174-183 MAY-JUN 2007 2007
ITEM IDENTIFIER: doi:10.1016/j.micpath.2007.01.005
ISSN: 0882-4010
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The cytolethal %%%distending%%% toxin (cdt) gene clusters of %%%Campylobacter%%% %%%coli%%% strain Col-243 and C fetus strain Col-187 were cloned and sequenced to understand the importance of Cdt as a virulence factor. The cdt genes of C. coli and C fetus consist of three closely linked genes termed cdtA, cdtB, cdtC whose sizes are 774, 80 1, and 570 bp, and 702, 798, and 546 bp, respectively. The homologies of each subunit of cdt genes between C jejuni and C coli, C jejuni and C fetus, or C coli and C fetus are 59.6%, 40.3%, or 46.5% for cdtA, 70.2%, 62.4%, or 61.3% for edtB, 61.3%, 52.3%, or 50.1 % for cdtC, respectively. Colony hybridization assay revealed that the genes homologous to the cdtABC gene were distributed in all 27, 19, 20 strains of C jejuni, C. coli, and C fetus, respectively, isolated from patients and animals in species-specific manner. Furthermore, nucleotide sequence of the cdt operon, including flanking region, of 10 strains of each species indicated that though the size of the cdtB gene was conserved in each species, those of cdtA and cdtC genes varied particularly among C coli strains. Amino acid residues demonstrated to be important for toxin activity in CdtB, corresponding to H 152, D185, D222, D258, H259 in Cj-CdtB, were also conserved in Cc-CdtB and Cf-CdtB. The cdt gene cluster was located in different sites among different species but in the same site of genomes of the same species. Cdt activity produced by C jejuni and C. fetus varied among strains, however, any C coli strains exhibited Cdt activity on HeLa cells. These data indicate that the cdt gene may have a potential for virulence factor at least in C jejuni and C fetus.

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Set	Items	Description
S1	21	(DISTENDING) AND (CAMPYLOBACTER()COLI)

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S2          87   AU='YAMASAKI SHINJI'
S3          15   AU='ASAKURA MASAHIRO'
S4          10   S2 AND S3
S5           3   S1 AND S2
? s s2 and cdta
              87  S2
             435  CDTA
      S6       3  S2 AND CDTA
? s s6 not s5
               3  S6
               3  S5
      S7       0  S6 NOT S5
? s s1 and cdta
              21  S1
             435  CDTA
      S8       8  S1 AND CDTA
? s s8 not s5
               8  S8
               3  S5
      S9       5  S8 NOT S5
? t s9/7/1-5

 9/7/1
DIALOG(R)File   5:Biosis Previews(R)
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0020123865   BIOSIS NO.: 200800170804
Optimisation of glycan and small molecule arrays for analysis of
  Campylobacter chemotaxis and adherence
AUTHOR: Asakura M (Reprint)
AUTHOR ADDRESS: Univ Osaka Prefecture, Sakai, Osaka, Japan**Japan
JOURNAL: Zoonoses Public Health  54 (Suppl. 1): p99 2007 2007
CONFERENCE/MEETING: 14th International Workshop on Campylobacter,
Helicobacter and Related Organisms  Rotterdam, NETHERLANDS  September 02
-05, 2007; 20070902
ISSN: 1863-1959
DOCUMENT TYPE: Meeting; Meeting Poster
RECORD TYPE: Citation
LANGUAGE: English


 9/7/2
DIALOG(R)File   5:Biosis Previews(R)
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0019544568   BIOSIS NO.: 200700204309
Relationships between bacterial genotypes and in vitro virulence properties
  of Campylobacter jejuni and %%%Campylobacter%%% %%%coli%%% isolated from
  turkeys
AUTHOR: Haenel I (Reprint); Borrmann E; Mueller J; Alter T
AUTHOR ADDRESS: Fed Res Inst Anim Hlth, Inst Mol Pathogenesis, Naumburger
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JOURNAL: Journal of Applied Microbiology  102 (2): p433-441 FEB 2007 2007
ISSN: 1364-5072
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
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LANGUAGE: English

ABSTRACT: Campylobacter isolates from turkeys were genotyped and characterized by their in vitro virulence properties. Relationships between bacterial genotypes and virulence properties were analysed.Isolates were analysed by pulsed-field gel electrophoresis and fla typing. The toxin production was determined on the phenotypic level using a CHO-K1 cell culture model and on the genotypic level using PCR for detection of the %%%cdtA%%%, cdtB and cdtC genes. Although the cdtB gene was detected from 100% of the Campylobacter jejuni and %%%Campylobacter%%% %%%coli%%% isolates we observed three different morphological pictures on the cells. Cytotoxicity was associated with cell distension or cell rounding. All four Camp. coli strains and one Camp. jejuni strain did not produce any cytotoxic changes on the cells. Adhesion, invasion and survival of Campylobacter isolates were determined in a Caco-2 cell culture model. All isolates adhered to and invaded Caco-2 cells, whereas 64.7% of the strains survived for 48 h in the cells.Seventeen Campylobacter isolates from turkeys were classified into four groups with regard to their in vitro abilities. Jackknife analysis revealed a strong association between these groups and genotype clusters.Typing methods have generally failed to identify strains with specific virulence properties. This study suggests that a relationship between subgroups of Campylobacter with common in vitro virulence characteristics and genotypes exist.

9/7/3
DIALOG(R)File 5:Biosis Previews(R)

19060686 BIOSIS NO.: 200600406081
Adherence to and invasion of human intestinal epithelial cells by Campylobacter jejuni and %%%Campylobacter%%% %%%coli%%% isolates from retail meat products
AUTHOR: Zheng JIE; Meng JIANGHONG; Zhao SHAOHUA; Singh RUBY; Song WENXIA (Reprint)
AUTHOR ADDRESS: Univ Maryland, Dept Cell Biol and Mol Genet, College Pk, MD 20742 USA**USA
AUTHOR E-MAIL ADDRESS: wenxsong@umd.edu
JOURNAL: Journal of Food Protection 69 (4): p768-774 APR 2006 2006
ISSN: 0362-028X
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: The abilities of 34 Campylobacter jejuni and 9 %%%Campylobacter%%% %%%coli%%% isolates recovered from retail meats to adhere to and invade human intestinal epithelial T84 cells were examined and compared with those of a well-characterized human clinical strain, C jejuni 81-176, to better assess the pathogenic potential of these meat isolates. The meat isolates exhibited a wide range of adherence and invasion abilities; a few of the isolates adhered to and invaded T84 cells almost as well as did C jejuni 81-176. There was a significant correlation between the adherence ability and the invasion ability of the Campylobacter isolates. The presence of eight putative virulence genes in these Campylobacter isolates that are potentially responsible for adherence and invasion or that encode cytolethal %%%distending%%% toxin

was determined using PCR. All Campylobacter isolates possessed flaA, cadF, pldA, %%%cdtA%%%, cdtB, and cdtC, and most (91%) also contained the ciaB gene. However, the virBII gene, carried by virulence plasmid pVir, was absent in almost all the Campylobacter isolates. Our findings indicated that C jejuni and C. coli present in retail meat were diverse in their ability to adhere to and invade human intestinal epithelial cells and that the putative virulence genes were widespread among the Campylobacter isolates. Thus, despite of the presence of the putative virulence genes, only some but not all Campylobacter strains isolated from retail meat can effectively invade human intestinal epithelial cells in vitro.

17391700 BIOSIS NO.: 200300350419
PCR detection of seven virulence and toxin genes of Campylobacter jejuni and %%%Campylobacter%%% %%%coli%%% isolates from Danish pigs and cattle and cytolethal %%%distending%%% toxin production of the isolates.
AUTHOR: Bang D D (Reprint); Nielsen E Moller; Scheutz F; Pedersen K; Handberg K; Madsen M
AUTHOR ADDRESS: Department of Poultry, Fish and Fur Animals, Danish Veterinary Institute, Hangovej 2, DK-8200, Aarhus N, Denmark**Denmark
AUTHOR E-MAIL ADDRESS: ddb@vetinst.dk
JOURNAL: Journal of Applied Microbiology 94 (6): p1003-1014 2003 2003
MEDIUM: print
ISSN: 1364-5072
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Aims: To study the prevalence of seven virulence and toxin genes, and cytolethal %%%distending%%% toxin (CDT) production of Campylobacter jejuni and C. coli isolates from Danish pigs and cattle. Methods and Results: The presence of the cadF, ceuE, virB11, flaA, %%%cdtA%%%, cdtB, cdtC and the cdt gene cluster among 40 C. jejuni and C. coli isolates was detected by polymerase chain reaction. The CDT production of the isolates was determined on Vero, colon 205 and chicken embryo cells. The cadF, flaA, ceuE and cdtB genes were detected from 100% of the isolates. The %%%cdtA%%% and cdtC genes were found in 95.0 and 90.0% of the isolates, respectively. The cdt gene cluster was detected in 82.5% isolates. Only 7.5% of the isolates were positive for virB11. Ninety-five per cent of the isolates produced CDT in Vero and colon 205 cell assays, and 90% of the isolates produced CDT in chicken embryo cell assays. Conclusions: High prevalence of the cadF, ceuE, flaA and cdtB genes was found. Data of the prevalence of cdt genes was consistent with the CDT titres produced by the isolates. %%%Campylobacter%%% %%%coli%%% from pigs produced high CDT titres. Significance and Impact of the Study: The high prevalence of seven virulence and toxin genes demonstrated that these putative pathogenic determinants are widespread among Campylobacter isolates from pigs and cattle. %%%Campylobacter%%% %%%coli%%% isolates from pigs produced much higher CDT titres compared with C. coli isolates from other sources suggesting that C. coli may be particularly adapted to or associated with this species.

9/7/5
DIALOG(R)File 5:Biosis Previews(R)

13406673 BIOSIS NO.: 199699040733
Prevalence of cytolethal %%%distending%%% toxin production in Campylobacter jejuni and relatedness of Campylobacter sp. cdtB genes
AUTHOR: Pickett Carol L (Reprint); Pesci Evertt C; Cottle Daniel L; Russell Gina; Erdem Aysegul Nalca; Zeytn Hasan
AUTHOR ADDRESS: Dep. Microbiol. Immunol., Univ. Kentucky, Chandler Med. Cent., 800 Rose Street, Lexington, KY 40536-0084, USA**USA
JOURNAL: Infection and Immunity 64 (6): p2070-2078 1996 1996
ISSN: 0019-9567
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Campylobacter jejuni produces a toxin called cytolethal %%%distending%%% toxin (CDT). The genes encoding this toxin in C. jejuni 81-176 were cloned and sequenced. The nucleotide sequence of the genes revealed that there are three genes, %%%cdtA%%%, cdtB, and cdtC, encoding proteins with predicted sizes of 30,116, 28,989, and 21,157 Da, respectively. All three proteins were found to be related to the Escherichia coli CDT proteins, yet the amino acid sequences have diverged significantly. All three genes were required for toxic activity in a HeLa cell assay. HeLa cell assays of a variety of C. jejuni and C. coli strains suggested that most C. jejuni strains produce significantly higher CDT titers than do C. coli strains. Southern hybridization experiments demonstrated that the cdtB gene is present on a 6.0-kb ClaI fragment in all but one of the C. jejuni strains tested; the cdtB gene was on a 6.9-kb ClaI fragment in one strain. The C. jejuni 81-176 cdtB probe hybridized weakly to DNAs from C. coli strains. The C. jejuni 81-176 cdtB probe did not hybridize to DNAs from representative C. fetus, C. lari, C. "upsaliensis," and C. hyointestinalis strains, although the HeLa cell assay indicated that these strains make CDT. PCR experiments indicated the probable presence of cdtB sequences in all of these Campylobacter species.
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Set	Items	Description
S1	21	(DISTENDING) AND (CAMPYLOBACTER()COLI)
S2	87	AU='YAMASAKI SHINJI'
S3	15	AU='ASAKURA MASAHIRO'
S4	10	S2 AND S3
S5	3	S1 AND S2
S6	3	S2 AND CDTA
S7	0	S6 NOT S5
S8	8	S1 AND CDTA
S9	5	S8 NOT S5

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